

## REMARKS

Reconsideration of this application is respectfully requested. Claims 1-30 are presently in this application. Claims 1-7, 11-13, 15-18, 23 and 29-30 were rejected as being unpatentable over Lowery (US 5,364,399) in view of Ralph (US 5,683,393). Claims 13 and 16 were further rejected over Lowery and Ralph in view of Richelsoph et al (US 6,695,846). Claims 8-10, 14, 19-22 and 24-26 were indicated to be allowable if rewritten to include the limitations of the base and intermediate claims.

Independent claims 1, 17 and 23 call for a plate with an opening defining at least a partial helical thread with the dimensions of the screw and plate allowing the screw to be threaded into the partial helical thread and then continue to be rotated without causing any axial movement between the screw and thread. The partial helical thread prevents the bone screw from being pushed out of the plate once inserted therein. The screw can only be removed from the plate by reversing the rotation of the screw in the partial helical thread. See page 2, lines 10-11 of the specification ("Installation and removal of the screws are only permissible through axial rotation of the screw"). Lowery requires the use of a separate locking screw 45 (Fig. 5) or an o-ring 69 (Fig. 6) to prevent the screws from being pushed out of the plate.

Ralph discloses an entirely different device, i.e., a rod-hook locking mechanism. The interrupted threaded shaft 120 of the screw is not intended to be threaded completely through the threaded bore 110 of the hook in the Ralph device. There is absolutely no teaching or suggestion in either reference to incorporate the deformed threaded bore of Ralph into the Lowery plate. Indeed the two devices are so dissimilar that there would be no reason to believe that one of ordinary skill

in the art would have any incentive to modify Lowery as suggested in the Office Action.

The Examiner has not met his or her burden of factually supporting any prima facie conclusion of obviousness. As a result applicant is under no obligation to submit evidence of nonobviousness (MPEP 2142). "To establish a prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." MPEP 2143.03 *In re Royka & Martin* 180 USPQ580 (CCPA 1974)

While it is believed that the independent claims, calling for the plate to have a partial helical thread are patentable over Lowery and Ralph, these claims have been amended to more particularly point out the function of the partial helical track or thread in cooperation with the bone screw.

The combination called for in independent claims 1, 17 and 23 would not have been obvious to one of ordinary skill in the art in view of Lowery and Ralph. Accordingly, these claims are now believed to be patentable and in condition for allowance.

Dependent claims 8-10, 14, 19-22 and 24-26 are patentable as based on the allowable independent claims and including additional limitations which further distinguish the references.

The remaining dependent claims are allowable for the reasons advanced with respect to the independent claims and for including additional limitations missing from the cited references. For example, claim 3 calls for the diameter of the upper section of the plate and the diameter of the head of the screw to be approximately equal to prevent the screw from pivoting with respect to the plate.

This structure is missing from Lowery. While Lowery does disclose in Fig. 7 the use of MORSE taper angles to wedge the head of the bone screw 77 into the plate 70, such a tapered assembly does not meet the claim language, i.e., would not allow the screw to continue to be rotated

without causing any axial movement between the screw and the plate. In addition, the MORSE tapered plate would not accommodate a pivotal screw arrangement.

Claims 7 and 8 call for a rectangular slot terminating in the partial helical track. This structure, missing from Lowery, allows the screw to be inserted through the partial helical track or thread and then moved along the slot with the screw being removable, i.e, via a reverse rotation, from the slot only when aligned with the partial thread. Claims 7 and 8 are patentable.

Claims 11 and 12 call for a slot with a partial helical track. This structure is missing from the references. These claims are patentable.

Claims 13 and 16 introduce a removable ring into the plate of Fig. 1. Richelsoph's screw retaining mechanism or ring 16" is not provided with a partial helical track and is not designed to allow the screw to better fit into the slot 44. The ring 16" is arranged to retain the screw in the plate when placed in the locked position. The structure called for in claims 13 and 16 is missing from the references. These claims are patentable.

Claim 15 is directed to the structure of Figs. 15-18 which structure is missing from the cited art. Claim 15 is patentable.

Claim 18 calls for the opening to be in the form of a slot with the partial helical thread at one end thereof. This claim is patentable for the reasons advanced with respect to claim 7. Claim 18 is patentable.

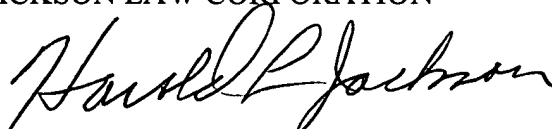
Claims 29 and 30, depending from claim 23, call for the screw head and upper section of the plate opening to form a fixed and variable screw/plate arrangement, respectively. Claims 29 and 30 are patentable.

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Reply to Office Action dated July 12, 2006

Applicants have made a valuable contribution to this fairly crowded art and are entitled to the protection afforded by the claims now in this application. A notice of allowance is respectfully requested. If applicants' attorney can be of any further assistance please call the undersigned at the number provided.

Respectfully submitted,

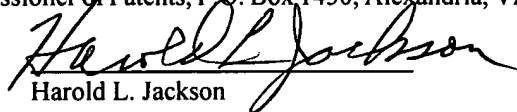
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on October 10, 2006.

October 10, 2006

  
Harold L. Jackson